Aktivitas Isolat Bakteri Pelarut Fosfat yang diperoleh dari Tanah Sawah di Daerah Jalan Lingkar dan Gunung Sari, Salatiga

(Activities of Phosphate Solubilizing Bacteria Isolated from Paddy Field in the area of Ring Road and Gunung Sari, Salatiga)

Nurul Ikhtiyarini, V. Irene Meitiniarti
Program Studi Biologi, Fakultas Biologi
Universitas Kristen Satya Wacana
Jl. Diponegoro 52-60, Salatiga, 50711, Indonesia
E-mail: 412013004@student.uksw.edu

ABSTRACT

One of essential macro elements for plants is phosphate. In general, the availability of phosphate in the soil is abundant, however 95-99% is in the form of insoluble phosphate rock and can-not be processed and used by plants. Therefore, it is necessary to seek for an alternative that involves soil microbes (bacteria solvent-phosphate). One of soil microbes, *Pseudomonas putida* has an ability to dissolve the phosphate. The previous isolation obtains two isolates of phosphate solvent. Two isolates of solvent P which have been obtained are taken from rice land in the Ring Road area of Salatiga (isolate A) and from rice field in Gunung Sari Salatiga (isolate B). The purpose of this study are (1) to determine the ability of the two bacteria in dissolving P using *Pseudomonas putida* as the comparison and (2) to determine which isolates that have the greatest ability in dissolving phosphate. Test for ability of bacteria to dissolve P was conducted on day 0, 7 and 14 repeatedly for three times. The results of research showed that on the day 14th, isolate of *Pseudomonas putida* with 420 mg/l of biomass can dissolve 11 mg/l of phosphate, isolate A with 830 mg/l of biomass can dissolve 6.61 mg/L of phosphate and isolate B with 191 mg/l of biomass can dissolve 10,9 gr/l of phosphate. Based on these results, it can be concluded that the isolate A and B have lower ability to dissolve phosphate compared to isolate of *Pseudomonas putida*.

Keywords: phosphate solvent bacterium, *Pseudomonas putida*, the ability of phosphate dissolving bacteria.